



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/077,191	02/15/2002	Jordan T. Bourilkov	08935-258001 / M-4980	9513
26161	7590	04/07/2004	EXAMINER	
FISH & RICHARDSON PC 225 FRANKLIN ST BOSTON, MA 02110			LUK, LAWRENCE W	
			ART UNIT	PAPER NUMBER
			2838	

DATE MAILED: 04/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/077,191	<b>Applicant(s)</b> BOURILKOV ET AL.	
	<b>Examiner</b> Lawrence W Luk	<b>Art Unit</b> 2838	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 08 March 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 10,11,14-17 and 19-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 10,11,14-17,19-21 and 23-25 is/are rejected.
- 7) ☒ Claim(s) 22 and 26 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some    \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date: _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                    | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date: _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. After further review, the indicated allowability of claims 10, 15 and 20 are withdrawn in view of Matsuura (6,094,034). Please see the rejection below.

#### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 10, 11, 14-17, 19-21 and 23 are rejected under 35 U.S.C. 102(b) as being anticipated by Matsuura (6,094,034).

As to claims 10, 15 and 20, Matsuura disclose in figure 1 & 2, column 2, lines 13-65, column 3, lines 59 to column 4, line 5, a switching type DC/DC boost type converter that receives energy from a primary cell with the primary cell being an alkaline cell, Zn-air cell, fuel cell, solar cell, or another current limited power source (column 4, lines 50-52), and is arranged to deliver the energy to a rechargeable cell with the rechargeable cell being an Li-Ion (column 3, lines 61-64) or Li-Polymer rechargeable cell; in figure 1, column 4, lines 47-67, a circuit disposed to control the switching type DC/DC converter, the circuit comprising: a resistor voltage divider coupled to a feedback input (unit 30, FB) of the converter, the resistor voltage divider having a resistance value selected to

Art Unit: 2838

provide from the DC/DC converter a fixed output voltage that is less than the full charge voltage of the rechargeable cell.

As to claims 11, 16 and 21, Matsuura disclose in column 5, lines 1-27, a primary battery current sensor/comparator, included in the feedback control loop of the DC/DC converter, that controls in part operation of the converter to provide constant current discharge on the primary battery side of the hybrid power supply.

As to claims 14, 19 and 23, Matsuura disclose in column 7, lines 20-23, the switching type DC/DC boost type converter delivers an output voltage that corresponds to about 90% charge of the rechargeable cell.

As to claim 17, Matsuura disclose in column 4, lines 50-52, the primary cell is an alkaline cell, Zn-air cell, fuel cell or solar cell, or another current limited power source.

#### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuura (6,094,034) in combination with Iwase (6,255,008).

As to claims 24 and 25, Matsuura disclose the elements as claimed, except for the primary cell is an alkaline cell, Zn-air cell, or fuel cell.

Art Unit: 2838

Iwase disclose in column 4, lines 26-35, the primary cell is an alkaline cell, Zn-air cell, or fuel cell.

It would have been obvious to person having ordinary skill in the art at the time of the invention made to modify the device of Matsuura to include the primary cell is fuel cell as thought by Iwase for providing a fuel cell system capable of minimizing the power loss that occurs in power conducting passage during supply of power.

### ***Allowable Subject Matter***

6. Claims 22 and 26 are objected to as being dependent upon a rejected base claim. The prior art of record fail to teach or reasonably suggest that:

Claim 22, a primary current sense amplifier/comparator and a power shutdown circuit to shut down the primary current sense amplifier/comparator.

Claim 26, the primary cell is an alkaline cell.

Claims 22 and 26 would be allowable if rewritten in independent from including all of the limitations of the base claim.

### ***Conclusion***

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lawrence W Luk whose telephone number is (571)272-2080. The examiner can normally be reached on 7 a.m. to 5 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Sherry can be reached on (571)272-2084. The

Art Unit: 2838

fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LWL  
March 31, 2004

*Lawrence Luke*  
*examiner*  
*3/31/04*